

# STATE OF COLORADO

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James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department  
of Public Health  
and Environment

March 25, 2009

PWSID# CO-0145540

Patterson Valley Water Company

P.O. Box 6 (County Road 14 and EE)

Rocky Ford, CO 81067

Certified Mail Number: 7007 0220 0001 0160 7355

**RE: Service of Amendment to Enforcement Order Dated November 26, 1999**

Dear Sir or Madam:

Patterson Valley Water Company is hereby issued the enclosed amendment to the Enforcement Order that was issued to Patterson Valley Water Company on November 26, 1999. This order amendment is issued by the Colorado Department of Public Health and Environment's Water Quality Control Division (the "Division") pursuant to the authority given to the Division by §25-1.5-203 of the Colorado Revised Statutes.

Should you desire to discuss this matter with the Division or if you have any questions regarding the order amendment(s), please don't hesitate to contact Jackie Whelan at (303) 692-3617 or by electronic mail at [jackie.whelan@state.co.us](mailto:jackie.whelan@state.co.us).

Sincerely,

Kristi-Ray Beaudin, Legal Assistant  
Compliance Assurance and Data Management Section  
WATER QUALITY CONTROL DIVISION

cc: Otero County Health Department  
Compliance Monitor / Drinking Water File

ec: Dave Knope, Engineering Section, CDPHE  
Dick Parachini, Watershed Program, CDPHE  
Betsy Beaver, Facility Operators Program, CDPHE  
Shawn McCaffrey, EPA Region VIII  
Jeff Lawrence, Director Consumer Protection Division, CDPHE  
Carolyn Schachterle, OPA

*Enclosures*



**COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
WATER QUALITY CONTROL DIVISION**

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**AMENDMENT TO ENFORCEMENT ORDER DATED NOVEMBER 26, 1999  
NUMBER TWO**

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**IN THE MATTER OF: PATTERSON VALLEY WATER COMPANY  
PUBLIC WATER SYSTEM IDENTIFICATION NUMBER: CO-0145540  
OTERO COUNTY, COLORADO**

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Pursuant to the authority vested in the Colorado Department of Public Health and Environment (the "Department") by §25-1-109 and §25-1.5-203 of the Colorado Revised Statutes ("C.R.S."), which authority has been delegated to the Department's Water Quality Control Division (the "Division"), the Division hereby makes the following findings and issues the following Enforcement Order Amendment:

**GENERAL FINDINGS**

1. The Division issued an Enforcement Order Dated November 26, 1999, to Patterson Valley Water Company citing violations of the Colorado Primary Drinking Water Regulations for failure to comply with the maximum contaminant level(s) for Gross Alpha Particle Activity and Combined Radium-226 and Radium-228. The Enforcement Order is attached hereto as Exhibit A and is incorporated herein by reference.
2. After re-evaluating the difficulties associated with the complying with the radionuclides maximum contaminant levels and in coordination with the Division's CORADS initiative, the Division is amending Enforcement Order Dated November 26, 1999, as follows:

**AMENDMENT NUMBER TWO**

3. Effective as of the issued date of this Amendment, Enforcement Order Dated November 26, 1999, is therefore amended to revise the Enforcement Order as follows:
  - A. Paragraph 6, section "Finding of Fact" is superseded and replaced with the following new paragraphs 3(A)(i)-(ii):
    - i. A review of the radiological monitoring data from January 1, 1994, to present provided to the Department by the System, establishes that the running annual

average of samples obtained by the System as required exceeds the maximum contaminant level of 15 picocuries per liter (pCi/L) for Gross Alpha Particle Activity.

Gross Alpha Particle Activity (in pCi/L)					
Sampling Point	Compliance Period/Date/Result	Compliance Period/Date/Result	Compliance Period/Date/Result	Compliance Period/Date/Result	Annual Average
001T	11/30/1994 24				24
001T	06/02/1997 48				48
001T	09/13/1999 14				14
001T	Q1 2000 02/09/00 36	Q2 2000 06/01/00 29	Q3 2000 09/25/00 32	Q4 2000 Sample not submitted	32
001T	Q2 2000 06/01/00 29	Q3 2000 09/25/00 32	Q4 2000 Sample not submitted	Q1 2001 Sample not submitted	31
001T	Q3 2000 09/25/00 32	Q4 2000 Sample not submitted	Q1 2001 Sample not submitted	Q2 2001 04/10/01 and 06/18/01 30.2 and 16.6	28
001T	Q4 2000 Sample not submitted	Q1 2001 Sample not submitted	Q2 2001 04/10/01 and 06/18/01 30.2 and 16.6	Q3 2001 09/21/01 36	30
001T	Q1 2001 Sample not submitted	Q2 2001 04/10/01 and 06/18/01 30.2 and 16.6	Q3 2001 09/21/01 36	Q4 2001 Sample not submitted	30
001T	Q2 2001 04/10/01 and 06/18/01 30.2 and 16.6	Q3 2001 09/21/01 36	Q4 2001 Sample not submitted	Q1 2002 Sample not submitted	30
001T	Q3 2001 09/21/01 36	Q4 2001 Sample not submitted	Q1 2002 Sample not submitted	Q2 2002 Sample not submitted	36
001T	Q4 2001 Sample not submitted	Q1 2002 Sample not submitted	Q2 2002 Sample not submitted	Q3 2002 07/02/02 and 09/24/02 25 and 35	30
001T	Q1 2002 Sample not submitted	Q2 2002 Sample not submitted	Q3 2002 07/02/02 and 09/24/02 25 and 35	Q4 2002 12/31/02 23	27
001T				Annual 2003 03/17/03 17	17
001T				Annual 2004 03/18/04 22	22

Gross Alpha Particle Activity (in pCi/L)					
Sampling Point	Compliance Period/Date/Result	Compliance Period/Date/Result	Compliance Period/Date/Result	Compliance Period/Date/Result	Annual Average
001T				Annual 2005 04/18/05 27	27
001T				Annual 2006 02/28/06 13	13
001T				Annual 2007 02/21/07 26	26
001T				Annual 2008 03/10/08 27	27

- ii. A review of the radiological monitoring data from January 1, 1990, to present provided to the Department by the System, establishes that the running annual average of samples obtained by the System as required exceeds the maximum contaminant level of 5 picocuries per liter (pCi/L) for Combined Radium-226 and Radium-228.

Combined Radium-226 and Radium-228 (in pCi/L)					
Sampling Point	Compliance Period/Date/Result	Compliance Period/Date/Result	Compliance Period/Date/Result	Compliance Period/Date/Result	Annual Average
001T	04/13/1990 26.5				26.5
001T	11/30/1994 9.5 (radium-226 only)				>9.5
001T	06/02/1997 27.8				27.8
001T	09/13/1999 22.4				22.4
001T	Q1 2000 02/09/00 25.9	Q2 2000 06/01/00 18.4	Q3 2000 09/25/00 23.2	Q4 2000 Sample not submitted	17
001T	Q2 2000 06/01/00 18.4	Q3 2000 09/25/00 23.2	Q4 2000 Sample not submitted	Q1 2001 Sample not submitted	21
001T	Q3 2000 09/25/00 23.2	Q4 2000 Sample not submitted	Q1 2001 Sample not submitted	Q2 2001 04/10/01 and 06/18/01 23.7 and 17.1	22
001T	Q4 2000 Sample not submitted	Q1 2001 Sample not submitted	Q2 2001 04/10/01 and 06/18/01 23.7 and 17.1	Q3 2001 09/21/01 18.8	20
001T	Q1 2001 Sample not submitted	Q2 2001 04/10/01 and 06/18/01 23.7 and 17.1	Q3 2001 09/21/01 18.8	Q4 2001 Sample not submitted	20

<b>Combined Radium-226 and Radium-228 (in pCi/L)</b>					
<b>Sampling Point</b>	<b>Compliance Period/Date/Result</b>	<b>Compliance Period/Date/Result</b>	<b>Compliance Period/Date/Result</b>	<b>Compliance Period/Date/Result</b>	<b>Annual Average</b>
001T	Q2 2001 04/10/01 and 06/18/01 23.7 and 17.1	Q3 2001 09/21/01 18.8	Q4 2001 Sample not submitted	Q1 2002 Sample not submitted	20
001T	Q3 2001 09/21/01 18.8	Q4 2001 Sample not submitted	Q1 2002 Sample not submitted	Q2 2002 Sample not submitted	19
001T	Q4 2001 Sample not submitted	Q1 2002 Sample not submitted	Q2 2002 Sample not submitted	Q3 2002 07/02/02 and 09/24/02 28.3 and 24.9	27
001T	Q1 2002 Sample not submitted	Q2 2002 Sample not submitted	Q3 2002 07/02/02 and 09/24/02 28.3 and 24.9	Q4 2002 12/31/02 21.6	24
001T				Annual 2003 03/17/03 16.9	17
001T				Annual 2004 03/18/04 25	25
001T				Annual 2005 04/18/05 20.1	20
001T				Annual 2006 02/28/06 22.2	22
001T				Annual 2007 02/21/07 and 10/29/07 24.4 and 22.2 and 17.6	21
001T				Annual 2008 03/10/08 24.2	24

B. The compliance schedule specified in paragraph 1, section "Order" is superseded and replaced with the following new paragraph 3(B)(i):

- i. In order to ensure long-term compliance with the maximum contaminant levels for Gross Alpha Particle Activity and Combined Radium-226 and Radium-228, Patterson Valley Water Company shall evaluate and upgrade, as needed, the System's water sources and/or treatment process(es) in accordance with the following schedule:
  - a. By April 30, 2009, retain a qualified Professional Engineer (licensed in Colorado and experienced in drinking water systems) to evaluate and recommend radiological treatment technologies or alternate water sources to the Patterson Valley Water Company to ensure compliance with the

maximum contaminant level for Gross Alpha Particle Activity and Combined Radium-226 and Radium-228.

- b. By October 31, 2009, submit for Department review and comment a finalized Preliminary Engineering Report for system improvements to comply with the maximum contaminant levels for Gross Alpha Particle Activity and Combined Radium-226 and Radium-228. If an alternate water source is proposed, submit for Department review and comment a detailed description of the alternate water source along with a copy of the laboratory analyses supporting that the alternate water source is suitable.
- c. The Preliminary Engineering Report submittal package must be developed consistent with the Colorado Drinking Water Preliminary Engineering Report Guidance & Review Checklist Form. (see [http://www.cdphe.state.co.us/wq/opa/pdf/19\\_CPERGuideChecklistDW.pdf](http://www.cdphe.state.co.us/wq/opa/pdf/19_CPERGuideChecklistDW.pdf))
- d. If an alternate water source is proposed, submit for Department review and comment a detailed description of the alternate water source along with a copy of the laboratory analyses supporting that the alternate water source is suitable.
- e. The Preliminary Engineering Report (if applicable) must clearly identify the specific treatment technology the Patterson Valley Water Company will use to ensure compliance with the maximum contaminant levels for Gross Alpha Particle Activity and Combined Radium-226 and Radium-228.
- f. The Preliminary Engineering Report (if applicable) must include a process flow schematic of the distribution system from wellheads to points of use, including flow rates, treatment facilities, storage tanks and all service connections supplied by the wells. Alternative treatment locations for the selected treatment process or processes must be evaluated with a recommended location selection. The process flow schematic information and evaluation must be included to ensure all water from the System is treated.
- g. The Preliminary Engineering Report (if applicable) must include a proposal for management of residuals from the treatment technology selected.
- h. The Preliminary Engineering Report submittal package must include design calculations showing the proposed treatment system is properly sized and chlorine contact times can be met for expected flow rates.

{Please note that, prior to construction, the Department must give final approval to any modifications to the System's water source or treatment process. The Department will not perform a detailed review and final approval of any proposed modifications until the final design plans and

specifications have been received pursuant to paragraph 3(B)(i)(k) below.}

- i. By February 28, 2010, submit for Department review and comment the final Design Report for the Patterson Valley Water Company System improvements to comply with the maximum contaminant levels for Gross Alpha Particle Activity and Combined Radium-226 and Radium-228.
- j. By August 1, 2010, submit Final Design Plans and Specifications for the System improvements for Department review and approval in accordance with the State of Colorado Design Criteria for Potable Water Systems.
- k. The Final Design Plans and Specifications submittal package must include specifications for treatment equipment and/or chemical additives that come in contact with the water that indicate ANSI standards 60 and 61 are met (NSF certification).
- l. By October 15, 2011, complete construction/implementation of the Department approved System improvements to ensure long-term compliance with the maximum contaminant levels Gross Alpha Particle Activity and Combined Radium-226 and Radium-228.
- m. By December 1, 2011, submit the Professional Engineer's Certification that the System improvements to comply with the maximum contaminant levels for Gross Alpha Particle Activity and Combined Radium-226 and Radium-228 were constructed/installed as approved by the Department.

C. The following new paragraphs are incorporated into Enforcement Order Number Dated November 26, 1999:

- i. By no later than April 30, 2009, the Patterson Valley Water Company shall complete an evaluation to determine appropriate interim measures to ensure that the System is providing the best possible quality of water available until the System implements improvements to ensure long-term compliance with the radiological maximum contaminant levels. The Patterson Valley Water Company shall submit a written report of the results of this evaluation to the Division for review and comment. Implementation of the interim measures identified by the Patterson Valley Water Company shall become a condition of this Enforcement Order unless notified by the Division, in writing, that alternate or additional interim measures are appropriate. If the Division imposes alternate or additional interim measures, they shall also become a condition of this Enforcement Order.
- ii. By no later than March 31, 2009, and every three (3) months thereafter, the Patterson Valley Water Company shall issue a public notice in accordance with 5 CCR 1003-1, Article 9.2 for each radiological maximum contaminant level violation identified in this Enforcement Order until the Patterson Valley Water Company has effectively addressed and returned to compliance with the

radiological maximum contaminant levels outlined in 5 CCR 1003-1, §2.6, Table 2-7. Within ten (10) calendar days of completion of each required public notification, the Patterson Valley Water Company shall submit to the Department, along with the mandatory Public Notification certification of delivery, a representative copy of notices distributed, published, posted, and/or made available to the persons served by the system and/or to the media. (Attached are copies of procedures and forms to assist you with the public notification requirements.)

- iii. The Patterson Valley Water Company shall submit "System Improvement Project - Progress Reports" to the Division every ninety (90) calendar days. The first report shall be submitted to the Division by March 31, 2009. At a minimum, each report shall clearly indicate the status of the system improvement project at the time the report is filed and outline activities to be undertaken within the next ninety (90) calendar days. Each report shall also detail any public notification provided during that period. These reports shall be required until the System has effectively addressed and returned to compliance with the radiological maximum contaminant levels outlined in 5 CCR 1003-1, §2.6, Table 2-7.
  - iv. All documents submitted under this Order Amendment shall use the same titles as stated in the Order Amendment, and shall reference both the number of the Order, Amendment number, and the paragraph number pursuant to which the document is required.
- D. For all documents, plans, records, reports, and replies required to be submitted by the Order, Patterson Valley Water Company shall submit an original and one copy (electronic is preferred) to the Division at the following address:

Colorado Department of Public Health and Environment  
Water Quality Control Division / WQCD-WQP-B2  
Compliance Assurance and Data Management Section / Enforcement Team  
Attention: Jackie Whelan  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530  
Email: [jackie.whelan@state.co.us](mailto:jackie.whelan@state.co.us)

*(For any facsimile transmittals, please include a cover sheet addressed to Ms. Whelan.)*

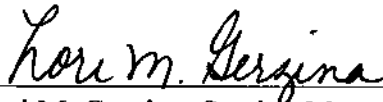


## **SCOPE OF AMENDMENT NUMBER TWO**

The scope of this Amendment Number Two to Enforcement Order Dated November 26, 1999, is limited to the revisions outlined above. All other terms and conditions of the Enforcement Order shall remain unchanged and in effect.

Issued at Denver, Colorado, this 25<sup>th</sup> day of March, 2009.

**FOR THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**



Lori M. Gerzina, Section Manager  
Compliance Assurance and Data Management Section  
Water Quality Control Division